

Notice of Allowability

Application No.

09/989,061

Examiner

Jennifer M. Kennedy

Applicant(s)

YASUOKA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 8/6/2003.
2. ☒ The allowed claim(s) is/are 1-7,9-21,23,24,27 and 59-73.
3. ☒ The drawings filed on 21 November 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>20031212</u> . |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mitchell W. Shapiro on December 11, 2003.

The application has been amended as follows:

Claims 8, 22, and 28-39 are cancelled. These claims were non-elected without traverse.

In claim 1, beginning at line 1 of part (c), replace:

"depositing third insulating film portions over at least said second insulating film portions and said first insulating film portions"

with

--forming a plurality of third insulating film portions, the plurality of third insulating film portions having gaps therebetween, and wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions—

In claim 13, line 1 of step (c), replace “depositing third insulating film portions” with –depositing a third insulating film--.

In claim 13, beginning line 1 of step (d) replace:

“removing said third insulating film portions from said first region without removing said third insulating film over said first insulating film portions in said second region”

with

--removing said third insulating film from said first region without removing parts of said third insulating film over said first insulating film portions in said second region, so as to form a plurality of third insulating film portions with gaps therebetween in said second region, wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions—

In claim 24, line 1 of step (d), replace “depositing third insulating film portions” with –depositing a third insulating film--.

In claim 24, beginning line 1 of step (e) replace:

“removing said second and third insulating film portions in said first region, and removing a portion of said second and third insulating film portions over a said first semiconductor region in said second region”

with

--removing said second and third insulating films in said first region, and removing a parts of said third insulating film over said first semiconductor regions in said second region so as to form a plurality of third insulating film portions with gaps therebetween in said second region, wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions--.

In claim 59, beginning on line 1 of step (d), replace:

“patterning said third insulating film in order to retain portions of said third insulating film in said boundary region and said second region”

with

--patterning said third insulating film in order to retain parts of said third insulating film in said boundary region and said second region, and so as to form in said second region at least one third insulating film portion having gaps adjacent to respective sides thereof and at least partially covering both at least one of said first insulating film portions and at least one of said second insulating film portions--.

In claim 59, beginning on line 2 of step (e), before “third insulating film portion”, -
-at least one—has been inserted--.

In claim 60, beginning on line 1 of step (e), replace:

“patterning said third insulating film in order to retain portions of said third insulating film in said boundary region and said second region”

with

--patterning said third insulating film in order to retain parts of said third insulating film in said boundary region and said second region, and so as to form in said second region at least one third insulating film portion having gaps adjacent to respective sides thereof and at least partially covering both at least one of said first insulating film portions and at least one of said second insulating film portions--.

In claim 60, beginning on line 2 of step (f), before “third insulating film”, --at least one-- has been inserted.

In claim 60, beginning on line 2 of step (f), after “third insulating film” --portion-- has been inserted.

In claim 60, line 2 of step (h), after “first region” --,-- has been inserted.

In claim 61, beginning at line 1 of part (c), replace:

“forming a plurality of third insulating film portions over said plurality of first insulating film portions and said second insulating film portions”

with

--forming a plurality of third insulating film portions, the plurality of third insulating film portions having gaps therebetween, and wherein at least one of said plurality of

third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions—

In claim 61, line 5 of part (f), “and” has been replaced with –or--.

In claim 62, beginning at line 1 of part (d), replace:

“forming a plurality of third insulating film portions over said first and second insulating film portions”

with

--forming a plurality of third insulating film portions, the plurality of third insulating film portions having gaps therebetween, and wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions—

The following is an examiner’s statement of reasons for allowance: the prior art, either singly or in combination, fails to anticipate or render obvious, the method including the limitations of forming a plurality of third insulating film portions, the plurality of third insulating film portions having gaps therebetween, and wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions,

forming first conductive film portions over said third insulating film portions in said second region, forming fourth insulating film portions over the surface of said semiconductor substrate in said first region, forming second conductive film portions over said fourth insulating film portions, in combination with the other limitations of independent claims 1 and 61 .

Further, the prior art, either singly or in combination, fails to anticipate or render obvious, the method including the limitations of removing said third insulating film from said first region without removing parts of said third insulating film over said first insulating film portions in said second region, so as to form a plurality of third insulating film portions with gaps therebetween in said second region, wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions, depositing a first conductive film in said first and second regions over the semiconductor substrate, forming fourth insulating film portions over the surface of said semiconductor substrate in said first region, forming second conductive film in said first region, in combination with the other limitations of independent claims 13 and 24.

Further, the prior art, either singly or in combination, fails to anticipate or render obvious, the method including the limitations of patterning said third insulating film in order to retain parts of said third insulating film in said boundary region and said second region, and so as to form in said second region at least one third insulating film portion having gaps adjacent to respective sides thereof and at least partially covering both at least one of said first insulating film portions and at least one of said second insulating

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film portions, forming a first conductive film portion over said at least one third insulating film portion in said second region, forming a fourth insulating film portion over a surface of said semiconductor substrate in said first region, forming a second conductive film portion over the fourth insulating film portion in the first region in combination with the other limitations of independent claims 59 and 60.

Further, the prior art, either singly or in combination, fails to anticipate or render obvious, the method including the limitations of forming a plurality of third insulating film portions, the plurality of third insulating film portions having gaps therebetween, and wherein at least one of said plurality of third insulating film portions at least partially covers both at least one of said first insulating film portions and at least one of said second insulating film portions, forming a plurality of first conductive film portions to serve as gate electrodes of said plurality of MISFETs over said third insulting film portions, in combination with the other limitations of independent claim 62.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Kennedy whose telephone number is (703)

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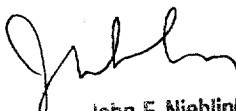
308-6171. **After February 3, 2003, the examiner can be reached at (571) 272-1672.**

The examiner can normally be reached on Mon.-Fri. 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. **After February 3, 2003 the examiner's supervisor can be reached at (571) 272-1679.** The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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John F. Niebling
Supervisory Patent Examiner
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